SM-H-17-1

Floppy Disk Drive

Service Manual

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ZENITH DATA SYSTEMS
SAINT JOSEPH, MICHIGAN 49085

TABLE OF CONTENTS

SPECIFICATIONS 1-1

SETUP 2-1
Programming 2-1
Hard-Sectored 2-1
Soft-Sectored 2-1
Cable Connections 2-2

OPERATION 3-1

SERVICE 4-1
Quick Checks 4-1
Rotational Speed Test 4-2

REPLACEMENT PARTS LIST 5-1

SPECIFICATIONS

5-1/4" Floppy Disk Drive.

48 TPI.

Single Read/Write Gap Head.

Rotational Speed — 300 rpm (200 octal).

Power: +12 VDC.

Programmable for Hard-Sectored or Soft-Sectored Controllers.

SETUP

Programming

HARD-SECTORED CONTROLLER

If you intend to use this drive with the H-88-1 hard-sectored controller (or with an H-17 controller in an H-8), perform the steps under "Hard-Sectored Controller." Refer to Figure 2-1 (fold-out from this page) for the following programming steps.

To set up a programming module, you may either cut the link on the module or bend out the appropriate leg. The advantage of bending out the leg is that you may return the module to its original state.

If this drive is to be hardware unit 0, either bend out the leg of the programming module or cut the programming module links as shown in Part A of Figure 2-1.

If this drive is to be hardware unit 1, either bend out the leg of the programming module or cut the programming module links as shown in Part B of Figure 2-1.

If this drive is to be hardware unit 2, either bend out the leg of the programming module or cut the programming module links as shown in Part C of Figure 2-1.

SOFT-SECTORED CONTROLLER (Double-Density)

If you intend to use this drive with a double-density controller, refer to Figure 2-2 (fold-out from this page) for the following programming steps.

To set up a programming module, you may either cut the link on the module or bend out the appropriate leg. The advantage of bending out the leg is that you may return the module to its original state.

If this drive is to be hardware unit 0, either bend out the leg of the programming module or cut the programming module links as shown in Part A of Figure 2-2.

If this drive is to be hardware unit 1, either bend out the leg of the programming module or cut the programming module links as shown in Part B of Figure 2-2.

If this drive is to be hardware unit 2, either bend out the leg of the programming module or cut the programming module links as shown in Part C of Figure 2-2.

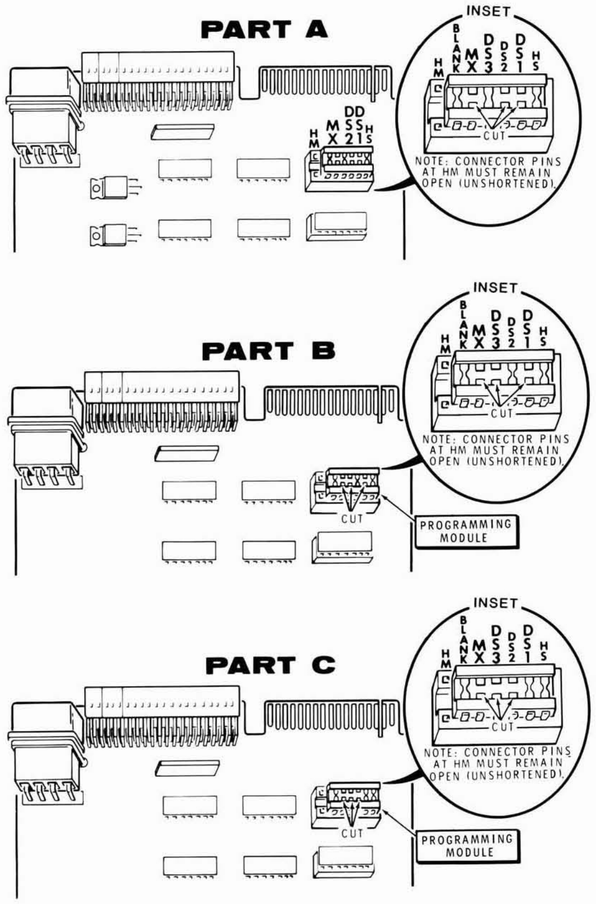

Figure 2-1

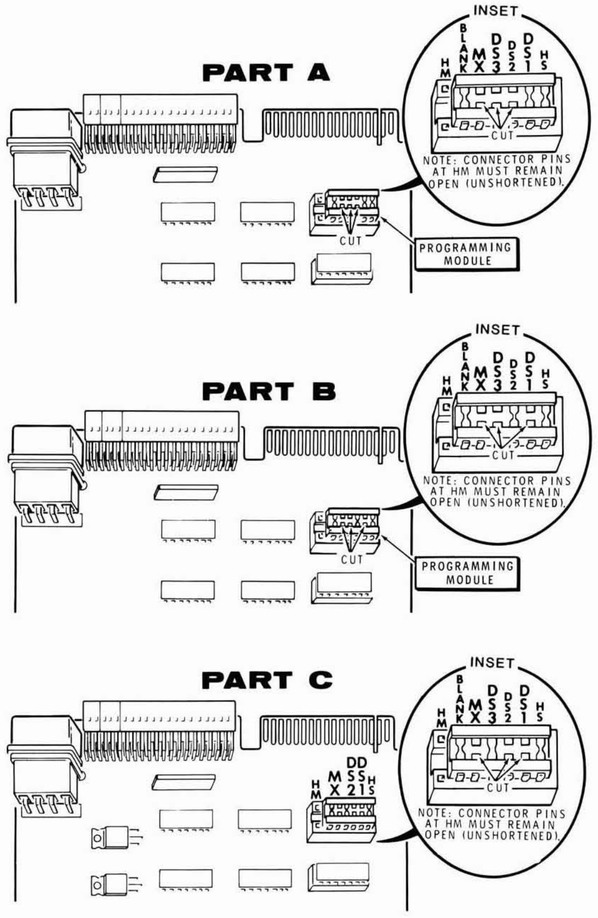

Figure 2-2

Cable Connections

Refer to Figure 2-3 for a view of cable connections.

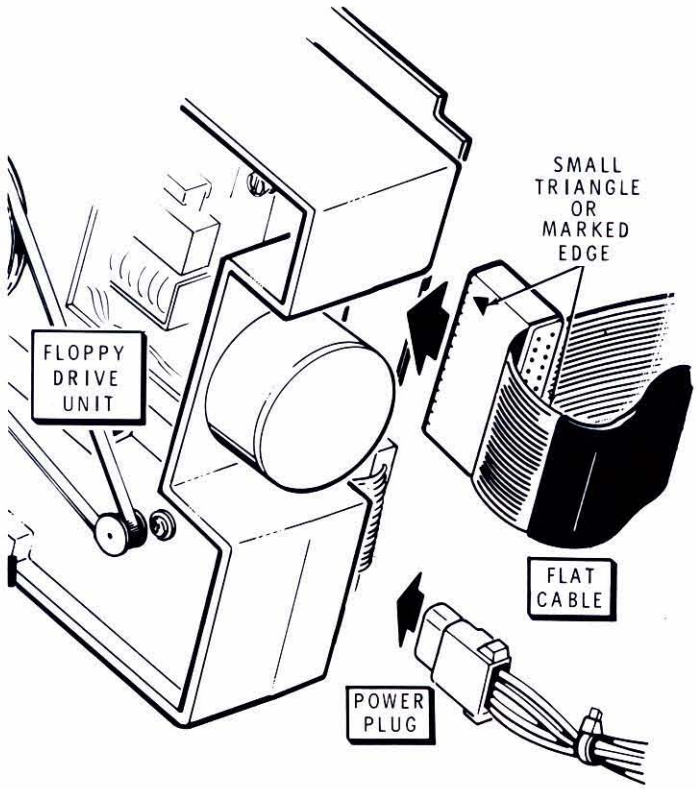

Figure 2-3

Floppy Disk Drive. Part number HE 150-91.

OPERATION

DISKETTE LOADING

Refer to Figure 3-1, open the front panel door, and insert the diskette, label towards the screen. Then close the door.

DISKETTE HANDLING

The diskette can be easily damaged. Handle it carefully as follows:

1. Keep the diskette in its storage envelope whenever it is not in the Floppy Disk Drive.
2. Keep the diskette away from magnetic fields. Magnetic fields can distort the recorded data on the diskette.
3. Replace damaged or worn storage envelopes.
4. Write on the plastic jacket only with a felt-tip pen. Do not use a lead pencil or ball-point pen.
5. Keep the diskette away from hot or contaminating materials.
6. Do not expose the diskette to sunlight.
7. Do not touch or clean the surface of the diskette. Abrasions can alter stored data.

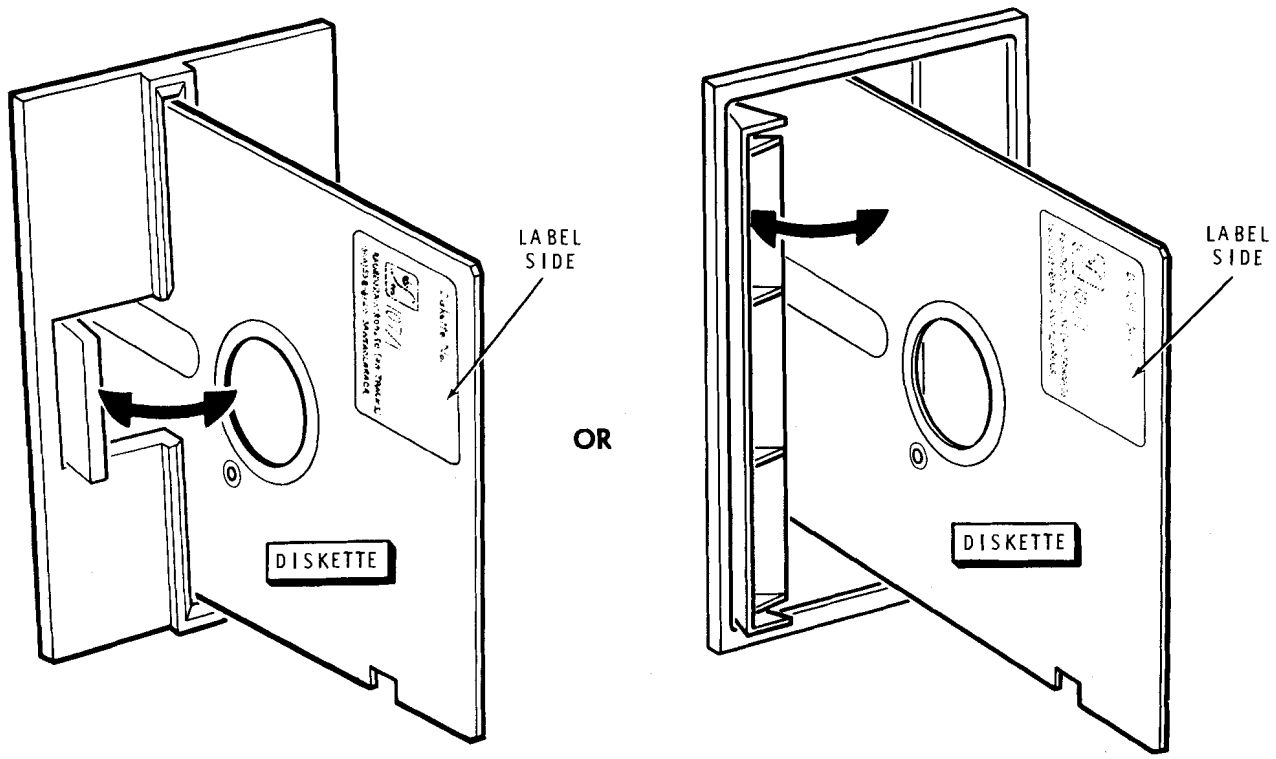

Figure 3-1

SERVICE

QUICK CHECKS

- Check the drive belt.
- Check the flat cable for proper connection to the drive.
- Check the power plug for proper connection to the drive.
- Check for 12 VDC at the power plug.
- Check the rotational speed.
- Check the programming plug for proper programming and check the drive for proper location.

ROTATIONAL SPEED TEST

If this drive is used with the hard-sectored, single-density controller (H-88-1 or H-17), perform the following "Speed Test."

If this drive is used with a soft-sectored, double-density controller, perform the rotational speed tests as described in the system software documentation.

Speed Test

This test will check the rotational speed of the floppy disk drive. After the test starts, it will display the disk drive speed test message and a "speed equals" message as follows:

Disk drive rotational speed test

Drive speed =

The word "Working" will be flashed on and off at the home position and a drive speed number (in octal), which should be as close to 200 as possible, will update with each flash on the screen. The rotational speed tolerance is one percent. The displayed value should be between 166 and 212 (remember, octal numbers jump from 177 to 200). Do not adjust the speed unless it is out of tolerance.

The drive unit has a control labeled R30 or R7, which is used to vary the drive speed. This control is located near the lower edge of the circuit board or on the other side of the drive as shown in Figure 4-1. This adjustment may be extremely sensitive, so if an adjustment is necessary, do not turn it far in either direction. Less than one degree of rotation in either direction should bring the drive speed into tolerance. Turn the control clockwise to decrease the speed or counterclockwise to increase it.

You may have to perform this test again at some future time, depending upon how heavily the floppy is used. As the drive bearings wear, the speed may change slightly. Fluctuations within the tolerance are normal and may be attributed to variations in temperature and humidity.

- Plug in the line cord and turn on the Computer.
- Refer to Figure 4-1, install a diskette into the drive as shown, and close the door. The test will not start until this is done. Also, the test will not damage the data on the diskette.

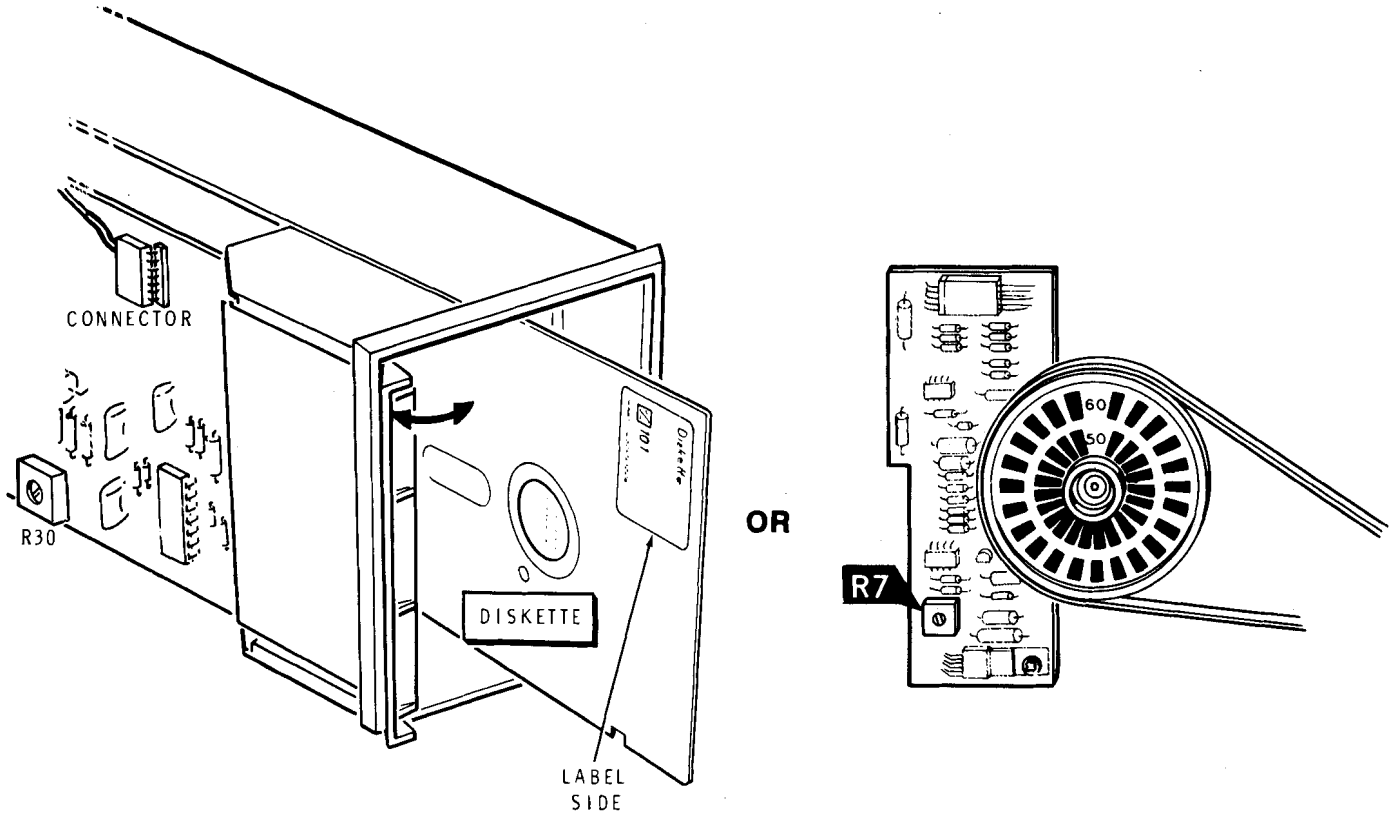

Figure 4-1

- Be sure the OFF LINE key is up (out). Then obtain the "H:" prompt. (Simultaneously push the right-hand SHIFT and RESET keys if necessary.)

- Type G7372CR. The total entry will be:
  H: **Go 7372** CR
  and the test will start.

- If you are using an H-8 with an H-17, refer to "Rotational Speed Adjustment" in the H-17 Operation Manual.

- If the drive speed is less than 166 or greater than 212, carefully adjust R30 or R7 with a small screwdriver until the speed is within tolerance and as close to 200 as possible.

- Simultaneously push the right-hand SHIFT and RESET keys to stop the test.

- Remove the diskette from the drive unit.

- Turn off the Computer and unplug the line cord.

REPLACEMENT PARTS LIST

PART NUMBER	DESCRIPTION
HE 150-91	Floppy disk drive
HE 134-1087	Cable — drive to computer
HE 448-432	Media — double-density, single-sided
HE 448-412	Media — single-density, single-sided
HE 969-59	Programming module